

REPORT

**1st Quarter 2015
Groundwater Monitoring Report**

**GE Aviation
612/60968**

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1st Quarter 2015 Groundwater Monitoring Report

Evendale, Ohio

Prepared for:
GE Aviation

612/60968



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1. INTRODUCTION

O'Brien & Gere has prepared this report on behalf of the General Electric Company (GE) to present the results of groundwater monitoring activities conducted during January through March 2015 (herein referred to as First Quarter 2015) at the GE Aviation facility located in Evendale, Ohio. The quarterly monitoring event was conducted in accordance with the approach and methods outlined in the 2010 IRM Performance Monitoring Plan (PMP) prepared by O'Brien & Gere.

Groundwater monitoring was conducted to monitor the temporal effect on groundwater conditions of a groundwater Interim Remedial Measure (IRM). The groundwater IRM, which includes the operation of seven groundwater extraction wells and a groundwater treatment plant (GWTP), has been installed on the southern portion of the GE Aviation manufacturing facility (Facility) in Evendale, Ohio, within an area known as the former Air Force Plant 36 (AFP 36) ([Figure 1](#)). The groundwater remedial measure was initiated as an IRM under a RCRA Corrective Action Permit with the objective of mitigating off-site migration of compounds of potential concern (COPCs), while minimizing the risk of cross-contamination and/or reducing the effectiveness of biodegradation processes.

Groundwater monitoring data are evaluated and reported after each sampling event, including evaluations of quality assurance, cross-contamination potential, and significant short-term anomalies. A summary of the performance monitoring assessment for First Quarter 2015, including responses to the key study questions outlined in the PMP, is provided in [Table 1](#). Relevant details are provided herein. Long-term trends and overall remediation progress will be evaluated and reported annually, at the end of each year.

2. METHODS

The groundwater monitoring network (**Figure 1**) consists of a total of 116 wells completed in three water-bearing units (Perched Zone, Upper Sand and Gravel (USG), and Lower Sand and Gravel (LSG)). As outlined in the PMP, the general scope of groundwater monitoring activities includes:

- Groundwater level monitoring using manual electronic as well as pressure transducer measurements at frequencies outlined in the PMP. Monitoring was conducted using a total of 66 wells completed in the Perched Zone (21 wells), USG (23 wells), and LSG (22 wells). **Table 2** provides a listing of the wells utilized for Progress Monitoring.
- Groundwater quality sampling was conducted using passive diffusion bag samplers (PDBs) for analysis of volatile organic compounds (VOCs) and in-situ field bioparameters (e.g., dissolved oxygen [DO] and oxidation-reduction potential [ORP]), in accordance with frequencies outlined in the PMP. Groundwater samples were collected from a total of 43 wells completed in the Perched Zone (11 wells – well AF-5P was not sampled due to a stuck PDB), USG (17 wells), and LSG (15 wells) (**Table 3**).
- Monthly sampling of groundwater from actively pumping extraction wells for analysis of VOCs.
- Evaluation of data from groundwater level and quality monitoring, including statistical analysis to address hydrogeologic conditions of stability (equilibrium) and potential cross-contamination.

Well completion data for groundwater level and quality monitoring are summarized in **Tables 2** and **3**, respectively. Methods and procedures for groundwater monitoring were conducted in accordance with the USEPA approved Sampling and Analysis Plan (SAP) (O'Brien & Gere, 2009) and the PMP. Additional details on field methods are provided in *Groundwater IRM, Quarterly Groundwater Monitoring Report – 3rd Qtr – 2012* (O'Brien & Gere, 2013).

Field quality control (QC) samples included trip blanks, field duplicates, and matrix spike/matrix spike duplicates (MS/MSDs). The QC samples were prepared in accordance with Section 3.3 of the SAP, using the frequencies specified in the Quality Assurance Project Plan (QAPP) tables contained in the SAP. Laboratory QA measures are identified in the SAP.

3. SUMMARY OF MONITORING RESULTS

Groundwater monitoring during the First Quarter 2015 consisted of the collection and analysis of groundwater level and quality data to evaluate the occurrence of cross-contamination and significant short-term anomalies. A summary of the performance monitoring assessment is presented in [Table 1](#) and additional details are provided below.

An electronic copy of the laboratory analytical report is included in the attached CD. The laboratory analytical results for VOCs underwent Level A data review and verification by O'Brien & Gere ([Appendix A](#)) for the First Quarter 2015 data.

3.1 GROUNDWATER PUMPING SYSTEM

- The overall IRM system average flow rate was 251 gallons per minute (gpm) and the run-time was approximately 99%. Extraction well average flow rates and durations for the First Quarter 2015 include:
 - » Perched Zone – 24 gpm (EW-5P) to 44 gpm (EW-4P)
 - » USG – 5 gpm (EW-7S)
 - » LSG – 49 gpm (EW-3D and EW-8D).

3.2 GROUNDWATER ELEVATIONS

- Groundwater elevation data were used to create hydrographs ([Figures 5](#) through [7](#)) and calculate vertical hydraulic gradients between select nested wells for trend and statistical analysis. The results of these analyses were used to evaluate the potential occurrence of cross-contamination and equilibrium conditions (as summarized in [Table 1](#)) as well as estimate the capture zone of each extraction well(s) ([Figures 2](#) through [4](#)).

3.3 GROUNDWATER QUALITY

- Groundwater quality data for First Quarter 2015 are provided in [Table 4](#). Groundwater quality data were summarized via time-series analyses for individual and nested monitoring wells ([Figures 8](#) through [10](#)). In addition, statistical analyses were conducted to assess pumping risk associated with vertical and/or lateral cross-contamination ([Table 5](#)). Groundwater quality data and associated introwell statistical analyses do not show significant trends or triggers in VOC concentrations indicative of cross-contamination, with the following noted exceptions:
 - » Well TMW-1P showed increasing concentrations after decreasing during recent quarterly events associated with plume movement within the system capture zone.
 - » Well AF-7S showed increasing concentrations after decreasing during recent quarterly events associated with plume movement within the system capture zone.
 - » Well OSMW-3D showed increasing concentrations after decreasing during recent quarterly events.
 - » Well TMW-2D showed slight increasing concentrations, but are below recent peak concentrations.
- Groundwater quality data for extraction wells and IRM system influent samples indicate steady or decreasing concentrations of CVOCs ([Figure 11](#)) with the exception of:
 - » EW-2P, which exhibited increasing CVOC concentrations (in particular TCA) associated with plume movement within the system capture zone (due to the restart of EW-2P in December 2014)
 - » EW-4P and EW-5P, which exhibited increasing CVOC concentrations (in particular 1,1-DCE and trans-1,2-DCE in EW-4P and trans-1,2-DCE in EW-5P) associated with plume movement within the system capture zone (due to the restart of EW-2P in December 2014)
 - » EW-7S, which exhibited increasing CVOC concentrations associated with the reduced pumping rate in this well.

4. REFERENCES

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Tables

Table 1

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GE Aviation_Evendale, Ohio - Groundwater IRM
Summary of Performance Monitoring Assessment - 1Q-15

	PRIMARY DATA GROUP	KEY QUESTIONS	YES	NO	COMMENTS
GROUNDWATER ELEVATIONS	Hydrographs/Trends	Significant trends identified?			Background groundwater levels increased overall in the Perched, USG and LSG due to seasonal rainfall and snow melt during 1Q-15 especially during March; however, the Perched declined until about March 3rd as a result of the repairing EW-2P, then all the aquifers responded to heavy rainfalls on March 3rd and 4th and 13th and 14th.
		Perched	✓		Noticeable rise in water levels in Perched, USG and LSG due to heavy rainfall events on March 3 and 4, 2015 and March 13 and 14, 2015.
		USG	✓		
		LSG	✓		
		Depression of water levels maintained?	✓		Very limited for USG due to reduced pumping rate and additional recovery during 1Q-15
	Vertical Gradients	Active pumping maintaining gradient reversal?		✓	AF-7P/S maintained; AF-4P/S - no due to EW-6P operational problems; AF-11S/D and OSMW-4S/D - no due to reduction in EW-7S pumping
		Statistically significant increasing (downward vertical) trends?		✓	No, except for AF-7S/D and PMW-3S/D indicating greater response to rainfall in USG than LSG (due to communication area with Perched); similarly the correlation between Perched and LSG was affected by greater response in the Perched than LSG to rainfall
		Steady state/equilibrium maintained?	✓		Except for USG where aquifer experienced additional recovery during 1Q-15
		Capture zone maintained at or near design?	✓		Except for USG where capture zone is smaller than designed
GROUNDWATER QUALITY	Chemical Trends	Significant trends identified?			
		Perched		✓	TMW-1P - increase associated with plume movement/IRM pumping OSMW-10P - VOC decreased overall (especially cis-1,2-DCE and TCA); however, TCE increased from 27 ppb to 81 ppb - associated with plume movement/IRM pumping
		USG		✓	AF-7S - increase associated with plume movement/IRM pumping; AF-9S - increase in VC may be associated with plume movement - continue to monitor OWMW-9S decreased, reversing an increasing trend
		LSG		✓	OSMW-3D - TCE and cis-1,2-DCE increased significantly - continue to monitor; TMW-2D increased slightly; OSMW-11D increased slightly associated with cis-1,2-DCE increase
		Field bioparameters - indicative of cross-contamination?		✓	OSMW-3D, OSMW-10P and TMW-1P - DO and/or ORP increased - continue to monitor
	Vertical Cross-Contamination	Field bioparameters - reduced biodegradation effectiveness?		✓	AF-25P, OSMW-3D, OSMW-4S, OSMW-10P and TMW-1P - DO and/or ORP (also pH in OSMW-4S) increased - continue to monitor
		Nested wells - vertical cross-contamination?	✓		
		Potential off-site sources inhibiting remediation?	✓		
	Influent Concentrations	Significant trends identified?	✓		EW-2P (TCA and 1,1-DCE), EW-4P (1,1-DCE, cis-1,2-DCE and VC), EW-6P (1,1-DCE and VC) increasing TCA associated with plume movement and re-start of EW-2P; other constituents due to degradation
		Statistical trends - Stable (no significant trends)?	✓		Except for EW-7S - increasing cis-1,2-DCE and VC associated with reduced capture zone for EW-7S
		Is continued pumping beneficial?	✓		
		Statistical trends - Decreasing (significant negative trend)?	✓		
		Optimize or re-evaluate?		✓	Except for EW-7S and EW-8D
Note	Key questions in BOLD are PMP Problem Study Questions				

Table 2

GE OHD 000 817 312

GE Aviation Evendale, Ohio - Groundwater IRM
Well Completion Data - Groundwater Level Monitoring

Water-Bearing Zone	Well ID - Groundwater Level Monitoring				Transducer ³	Northing (feet)	Easting (feet)	Ground Surface Elev (ft)	TOC Elevation (ft)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC) ⁴
	Hydraulic Control Monitoring	Progress Monitoring ¹	Semiannual Monitoring ²								Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
Perched															
	AF-2P	AF-2P	AF-2P			456379.19	1418008.71	562.10	563.39	2.00	28.00	534.10	33.00	529.10	34.46
			AF-3P			456297.40	1417884.19	560.40	561.82	2.00	21.00	539.40	31.00	529.40	32.42
	AF-4P	AF-4P		T	456180.93	1417877.42	560.40	561.90	2.00	24.50	535.90	34.50	525.90	36.21	
	AF-5P	AF-5P	AF-5P		455882.90	1417831.43	559.80	561.22	2.00	28.00	531.80	33.00	526.80	34.75	
	AF-6P	AF-6P			456059.85	1417402.52	559.80	561.68	2.00	27.70	532.10	32.70	527.10	35.34	
	AF-7P	AF-7P	AF-7P	T	455478.24	1417577.30	559.80	561.21	2.00	31.50	528.30	36.50	523.30	37.43	
	AF-10P	AF-10P			456127.64	1416977.53	559.90	561.48	2.00	17.40	542.50	22.40	537.50	23.68	
	AF-12P	AF-12P			456295.77	1416183.22	574.20	575.05	2.00	14.50	559.70	19.50	554.70	20.78	
	AF-13P	AF-13P			456494.02	1416526.13	565.40	566.82	2.00	35.37	530.03	45.37	520.03	32.45	
		AF-14P			456528.73	1416790.19	559.53	558.54	2.00	17.50	542.03	27.50	532.03	28.92	
	AF-23P	AF-23P	AF-23P		457010.00	1417595.00	560.00	559.75	2.00	22.88	537.12	32.88	527.12	32.15	
	AF-24P		AF-24P		456451.17	1417576.18	559.82	558.89	2.00	26.23	533.59	36.23	523.59	35.40	
	AF-25P	AF-25P	AF-25P	T	456074.92	1417500.43	558.40	558.08	2.00	23.27	535.13	33.27	525.13	33.10	
	AF-26P				456122.18	1417674.94	558.30	557.78	2.00	30.96	527.34	40.96	517.34	35.44	
			AOC LDMW-1S		457924.00	1417429.00	556.20	555.81	2.00	13.29	542.91	23.29	532.91	22.90	
			AOC PSTMW-1SR		459022.76	1417784.33	556.91		2.00						
			AOC PSTMW-2S		458993.37	1417998.15	559.90	559.70	2.00	18.50	541.40	28.50	531.40	24.50	
	GM-3P				457074.62	1418304.17	559.50	559.24	2.00	19.30	540.20	29.30	530.20	29.3 ⁴	
	GM-9P	GM-9P ⁵		T	457104.10	1417217.11	560.30	559.95	2.00	18.00	542.30	28.00	532.30	27.65	
			H-221		454547.97	1417264.66	554.70	554.37	2.00	20.00	534.70	30.00	524.70	28.65	
	OSMW-1P	OSMW-1P	OSMW-1P	T	455078.23	1417736.02	551.50	554.09	2.00	20.00	531.50	30.00	521.50	32.53	
	OSMW-2P	OSMW-2P	OSMW-2P		455601.82	1417822.50	554.80	557.01	2.00	27.00	527.80	37.00	517.80	38.87	
	OSMW-10P	OSMW-10P		T	455020.27	1417400.34	555.82	558.57	2.00	20.00	535.82	30.00	525.82	32.57	
	OSMW-11P	OSMW-11P			455459.30	1418006.45	552.04	551.71	2.00	13.00	539.04	23.00	529.04	22.93	
	OSMW-12P				455880.25	1418332.91	553.66	553.35	2.00	14.70	538.96	24.70	528.96	24.63	
	OW-1P				455883.50	1417685.55	559.42	559.75	2.00	30.00	529.42	35.00	524.42	35 ⁴	
	PMW-3P	PMW-3P		T	455249.65	1417470.90	557.41	560.10	2.00	16.00	541.41	26.00	531.41	29.07	
	PMW-5P	PMW-5P			1417293.42	455489.81	559.11	558.71	2.00	20.15	538.96	30.15	528.96	29.75	
	PMW-6P	PMW-6P			1417456.08	455769.69	561.50	561.10	2.00	28.57	532.93	38.57	522.93	38.17	
	TMW-1P	TMW-1P		T	455737.69	1417702.75	559.77	562.12	2.00	22.00	537.77	32.00	527.77	33.84	
	TMW-2P	TMW-2P			455595.65	1416931.21	556.94	559.71	2.00	28.50	528.44	33.50	523.44	38.45	

See notes on page 3.

Table 2

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GE Aviation Evendale, Ohio - Groundwater IRM
Well Completion Data - Groundwater Level Monitoring

Water-Bearing Zone	Well ID - Groundwater Level Monitoring			Transducer ³	Northing (feet)	Easting (feet)	Ground Surface Elev (ft)	TOC Elevation (ft)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC) ⁴
	Hydraulic Control Monitoring	Progress Monitoring ¹	Semiannual Monitoring ²							Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
USG														
	AF-4S	AF-4S		T	456183.67	1417879.81	560.30	562.22	2.00	43.00	517.30	53.00	507.30	54.03
	AF-5S	AF-5S	AF-5S		455887.32	1417833.15	559.60	561.60	2.00	41.00	518.60	51.00	508.60	51.92
	AF-6S	AF-6S			456056.40	1417402.71	560.10	562.67	2.00	41.00	519.10	51.00	509.10	52.80
	AF-7S	AF-7S	AF-7S	T	455482.27	1417577.68	559.70	562.02	2.00	45.00	514.70	55.00	504.70	56.68
	AF-8S	AF-8S			455524.80	1417088.16	559.10	561.08	2.00	50.00	509.10	50.00	499.10	60.00
	AF-9S	AF-9S	AF-9S	T	455790.53	1416793.04	562.00	564.19	2.00	50.00	512.00	60.00	502.00	61.75
	AF-10S	AF-10S			456134.19	1416979.21	559.90	561.98	2.00	61.00	498.90	71.00	488.90	67.75
	AF-11S	AF-11S		T	456094.23	1416577.99	564.70	565.20	2.00	53.00	511.70	63.00	501.70	63.27
	AF-12S	AF-12S			456295.87	1416186.19	574.00	575.41	2.00	64.00	510.00	74.00	500.00	72.31
	AF-13S	AF-13S			456488.94	1416522.95	565.20	567.91	2.00	46.50	518.70	56.50	508.70	56.5 ⁴
	AF-14S	AF-14S			456526.22	1416788.87	559.50	558.56	2.00	56.50	503.00	66.50	493.00	66.5 ⁴
	AF-19S	AF-19S		T	455823.23	1417037.78	561.60	563.87	2.00	52.40	509.20	62.40	499.20	64.65
	AF-20S	AF-20S			455927.77	1416940.35	559.80	562.47	2.00	59.00	500.80	69.00	490.80	71.57
	GM-9S	GM-9S		T	457108.81	1417214.23	561.00	560.13	2.00	43.00	518.00	53.00	508.00	52.09
	OSMW-1S	OSMW-1S	OSMW-1S	T	455082.59	1417738.59	551.50	554.14	2.00	41.00	510.50	51.00	500.50	52.84
	OSMW-3S	OSMW-3S	OSMW-3S	T	455309.01	1417107.64	557.10	559.91	2.00	54.00	503.10	64.00	493.10	66.60
	OSMW-4S	OSMW-4S	OSMW-4S	T	456144.10	1416386.57	565.50	565.10	2.00	65.00	500.50	75.00	490.50	75.84
			OSMW-5S		453589.27	1416137.49	576.70	576.44	2.00	63.80	512.90	73.80	502.90	73.54
			OSMW-6S		455149.40	1416267.11	586.61	586.38	2.00	80.00	506.61	90.00	496.61	88.78
			OSMW-8S		454625.51	1415147.34	584.64	584.33	2.00	77.41	507.23	87.41	497.23	86.70
	OSMW-9S	OSMW-9S			455705.63	1415409.73	594.66	594.37	2.00	88.80	505.86	98.80	495.86	101.30
	OSMW-10S	OSMW-10S		T	455019.93	1417400.39	555.82	558.59	2.00	47.20	508.62	57.20	498.62	58.20
	OSMW-11S	OSMW-11S			455459.42	1418006.57	552.04	551.64	2.00	37.25	514.79	47.25	504.79	47.20
	PMW-3S	PMW-3S		T	455249.82	1417470.89	557.41	560.12	2.00	44.80	512.61	54.80	502.61	57.40
	TMW-1S	TMW-1S	TMW-1S	T	455739.88	1417703.19	559.78	561.63	2.00	48.30	511.48	58.30	501.48	59.75
	TMW-2S	TMW-2S	TMW-2S		455597.25	1416929.92	557.01	560.15	2.00	40.00	517.01	50.00	507.01	53.08

See notes on page 3.

Table 2

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GE Aviation Evendale, Ohio - Groundwater IRM
Well Completion Data - Groundwater Level Monitoring

Water-Bearing Zone	Well ID - Groundwater Level Monitoring			Transducer ³	Northing (feet)	Easting (feet)	Ground Surface Elev (ft)	TOC Elevation (ft)	Inner Casing Diameter (inches)	Well Screen				Total Depth (ft bTOC) ⁴
	Hydraulic Control Monitoring	Progress Monitoring ¹	Semiannual Monitoring ²							Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
LSG														
	AF-1D				456927.14	1417977.19	559.80	559.78	4.00	108.00	451.80	118.00	441.80	118.00
	AF-5D		AF-5D		455889.87	1417834.37	559.50	561.66	2.00	100.00	459.50	110.00	449.50	108.1
	AF-7D	AF-7D	AF-7D	T	455489.28	1417578.92	559.70	561.23	4.00	109.00	450.70	119.00	440.70	118.77
	AF-8D				455517.69	1417091.88	559.00	560.73	4.00	86.00	473.00	96.00	463.00	93.72
	AF-9D	AF-9D		T	455794.33	1416786.95	562.20	563.93	4.00	78.00	484.20	88.00	474.20	93.30
	AF-11D	AF-11D		T	456087.97	1416583.70	564.90	566.27	4.00	92.00	472.90	102.00	462.90	101.79
	AF-12D	AF-12D			456297.35	1416191.94	573.30	575.45	4.00	102.00	471.30	112.00	461.30	111.85
	AF-15D	AF-15D			456991.44	1416851.88	559.80	560.95	4.00	103.00	456.80	113.00	446.80	112.86
	AF-16D				457003.87	1417280.19	560.40	561.83	4.00	91.00	469.40	101.00	459.40	102.57
	AF-17D	AF-17D			456484.75	1417467.78	560.30	561.37	4.00	90.00	470.30	100.00	460.30	99.48
	AF-19D	AF-19D		T	455818.36	1417039.55	561.70	564.10	2.00	81.20	480.50	91.20	470.50	93.40
	AF-20D	AF-20D			455933.76	1416941.09	559.80	562.52	2.00	81.10	478.70	91.10	468.70	93.56
	AF-21D	AF-21D	AF-21D		455941.03	1416777.12	560.00	559.61	2.00	80.00	480.00	90.00	470.00	90.11
	GM-3D				457163.25	1418266.08	560.80	562.47	4.00	138.00	422.80	148.00	412.80	148.00
	GM-5D				457241.00	1416754.00	562.00	564.07	4.00	126.43	455.57	116.43	445.57	116.75 ⁴
	GM-9D	GM-9D		T	457107.93	1417219.35	561.00	560.06	4.00	100.00	461.00	110.00	451.00	109.30
	H-223	H-223			454519.10	1417253.00	555.00	555.60	2.00	154.50	400.50	164.50	390.50	161.51
	OSMW-1D	OSMW-1D	OSMW-1D	T	455082.67	1417738.40	551.10	554.16	2.00	80.00	471.10	90.00	461.10	92.75
	OSMW-3D	OSMW-3D	OSMW-3D	T	455309.10	1417107.28	557.10	559.91	2.00	131.00	426.10	141.00	416.10	143.31
	OSMW-4D	OSMW-4D	OSMW-4D	T	456143.93	1416386.96	565.50	565.14	2.00	127.00	438.50	137.00	428.50	135.94
			OSMW-5D		452875.51	1416398.42	560.53	560.25	2.00	121.00	439.53	131.00	429.53	130.72
	OSMW-6D	OSMW-6D	OSMW-6D		455147.40	1416265.11	586.38	586.08	2.00	149.77	436.61	159.77	426.61	162.20
	OSMW-7D	OSMW-7D	OSMW-7D		456711.82	1415686.05	592.44	592.09	2.00	141.00	451.44	151.00	441.44	148.80
			OSMW-8D		454625.45	1415147.03	584.64	584.34	2.00	175.30	409.34	185.30	399.34	187.20
	OSMW-9D	OSMW-9D			455705.86	1415409.84	594.66	594.39	2.00	166.00	428.66	176.00	418.66	175.60
	OSMW-10D	OSMW-10D		T	455020.11	1417400.16	555.82	558.61	2.00	130.00	425.82	140.00	415.82	142.63
	OSMW-11D				455459.26	1418006.71	552.04	551.72	2.00	81.00	471.04	91.00	461.04	90.30
	OSMW-11DD				455459.02	1418006.62	552.04	551.68	2.00	140.00	412.04	150.00	402.04	149.83
	OSMW-12D				455880.20	1418333.14	553.66	553.29	2.00	123.00	430.66	133.00	420.66	133.76
	OSMW-12DD				455880.36	1418333.21	553.66	553.18	2.00	141.00	412.66	151.00	402.66	149.20
	OSMW-13D				455241.33	1417853.92	552.03	551.82	2.00	96.00	456.03	106.00	446.03	103.65
	OSMW-13DD				455241.62	1417854.06	552.03	551.70	2.00	142.00	410.03	152.00	400.03	151.84
	OW-3D				455360.77	1417112.74	557.72	557.43	2.00	135.00	422.72	140.00	417.72	140 ⁴
	OW-4D				455422.91	1417165.94	559.68	559.41	2.00	135.00	424.68	140.00	419.68	140 ⁴
	PMW-2D	PMW-2D			456024.30	1417902.40	560.05	562.47	2.00	125.00	435.05	135.00	425.05	139.70
	PMW-3D	PMW-3D		T	455249.80	1417471.07	557.41	560.04	2.00	126.00	431.41	136.00	421.41	139.75
	PMW-4D	PMW-4D			456424.32	1416617.44	564.33	567.25	2.00	130.00	434.33	140.00	424.33	142.51
	TMW-1D		TMW-1D		455740.26	1417702.92	559.78	562.02	2.00	94.30	465.48	104.30	455.48	106.45
	TMW-2D	TMW-2D	TMW-2D		455597.15	1416930.07	557.01	559.86	2.00	117.30	439.71	127.30	429.71	129.32

Notes

¹ Quarterly Progress Monitoring in the Perched, USG and LSG.² Semiannual sampling occurs in the second and fourth quarters.³ T = Transducer; Blank = Manual.⁴ Total depths from ground surface (GM-3P, OW-1P, AF-13S, AF-14S, GM-5D, OW-3D, OW-4D)⁵ The transducer data from GM-9P was not retrieved during 1Q 2015 due to construction/demolition equipment obstructing access to this flush mounted well.

Table 3

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Well Completion Data - Groundwater Quality Monitoring

Water-Bearing Zone	Well ID - VOC Sampling			Northing (feet)	Easting (feet)	Ground Surface Elev (ft)	TOC Elevation (ft)	Inner Casing Diameter	Well Screen				Total Depth (ft bTOC) ³
	Hydraulic Control Monitoring	Progress Monitoring ¹	Semiannual Monitoring ²						Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
Perched													
			AF-2P	456379.19	1418008.71	562.10	563.39	2.00	28.00	534.10	33.00	529.10	34.46
			AF-3P	456297.40	1417884.19	560.40	561.82	2.00	21.00	539.40	31.00	529.40	32.42
AF-4P	AF-4P		456180.93	1417877.42	560.40	561.90	2.00	24.50	535.90	34.50	525.90	36.21	
	AF-5P ⁴	AF-5P ⁴	455882.90	1417831.43	559.80	561.22	2.00	28.00	531.80	33.00	526.80	34.75	
AF-7P	AF-7P	AF-7P	455478.24	1417577.30	559.80	561.21	2.00	31.50	528.30	36.50	523.30	37.43	
AF-13P	AF-13P		456494.02	1416526.13	565.40	566.82	2.00	3.13	562.27	13.13	552.27	15.4 ³	
		AF-23P	457010.00	1417595.00	560.00	559.75	2.00	22.88	537.12	32.88	527.12	32.15	
		AF-24P	456451.17	1417576.18	559.82	558.89	2.00	26.23	533.59	36.23	523.59	35.40	
AF-25P	AF-25P	AF-25P	456074.92	1417500.43	558.40	558.08	2.00	23.27	535.13	33.27	525.13	33.10	
		AOC LDMW-1S	457924.00	1417429.00	556.20	555.81	2.00	13.29	542.91	23.29	532.91	22.90	
		AOC PSTMW-1SR	459022.76	1417784.33	556.91		2.00						
		AOC PSTMW-2S	458993.37	1417998.15	559.90	559.70	2.00	18.50	541.40	28.50	531.40	24.50	
		H-221	454547.97	1417264.66	554.70	554.37	2.00	20.00	534.70	30.00	524.70	28.65	
	OSMW-1P	OSMW-1P	455078.23	1417736.02	551.50	554.09	2.00	20.00	531.50	30.00	521.50	32.53	
		OSMW-2P	455601.82	1417822.50	554.80	557.01	2.00	27.00	527.80	37.00	517.80	38.87	
	OSMW-10P		455020.27	1417400.34	555.82	558.57	2.00	20.00	535.82	30.00	525.82	32.57	
	OSMW-11P		455459.30	1418006.45	552.04	551.71	2.00	13.00	539.04	23.00	529.04	22.93	
	OSMW-12P		455880.25	1418332.91	553.66	553.35	2.00	14.70	538.96	24.70	528.96	24.63	
	OSMW-13P		455241.47	1417854.22	552.03	551.75	2.00	22.00	530.03	32.00	520.03	32.45	
PMW-3P	PMW-3P		455249.65	1417470.90	557.41	560.10	2.00	16.00	541.41	26.00	531.41	29.07	
TMW-1P	TMW-1P		455737.69	1417702.75	559.77	562.12	2.00	22.00	537.77	32.00	527.77	33.84	
USG													
	AF-4S	AF-4S		456183.67	1417879.81	560.30	562.22	2.00	43.00	517.30	53.00	507.30	54.03
		AF-5S	AF-5S	455887.32	1417833.15	559.60	561.60	2.00	41.00	518.60	51.00	508.60	51.92
AF-6S	AF-6S			456056.4	1417402.71	560.10	562.67	2.00	41.00	519.10	51.00	509.10	52.80
AF-7S	AF-7S	AF-7S	455482.27	1417577.68	559.70	562.02	2.00	45.00	514.70	55.00	504.70	56.68	
AF-9S	AF-9S	AF-9S	455790.53	1416793.04	562.00	564.19	2.00	50.00	512.00	60.00	502.00	61.75	
AF-11S	AF-11S		456094.23	1416577.99	564.70	565.20	2.00	53.00	511.70	63.00	501.70	63.27	
AF-13S	AF-13S		456488.94	1416522.95	565.20	567.91	2.00	45.60	519.60	55.60	509.60	55.6 ³	
AF-19S	AF-19S		455823.23	1417037.78	561.60	563.87	2.00	52.40	509.20	62.40	499.20	64.65	
OSMW-1S	OSMW-1S	OSMW-1S	455082.59	1417738.59	551.50	554.14	2.00	41.00	510.50	51.00	500.50	52.84	
OSMW-3S	OSMW-3S	OSMW-3S	455309.01	1417107.64	557.10	559.91	2.00	54.00	503.10	64.00	493.10	66.60	
OSMW-4S	OSMW-4S	OSMW-4S	456144.10	1416386.57	565.50	565.10	2.00	65.00	500.50	75.00	490.50	75.84	
		OSMW-5S	453589.27	1416137.49	576.70	576.44	2.00	63.80	512.90	73.80	502.90	73.54	
		OSMW-6S	455149.40	1416267.11	586.61	586.38	2.00	80.00	506.61	90.00	496.61	88.78	
		OSMW-8S	454625.51	1415147.34	584.64	584.33	2.00	77.41	507.23	87.41	497.23	86.70	
		OSMW-9S	455705.63	1415409.73	594.66	594.37	2.00	88.80	505.86	98.80	495.86	101.30	
		OSMW-10S	455019.93	1417400.39	555.82	558.59	2.00	47.20	508.62	57.20	498.62	58.20	
		OSMW-11S	455459.42	1418006.57	552.04	551.64	2.00	37.25	514.79	47.25	504.79	47.20	
PMW-3S	PMW-3S		455249.82	1417470.89	557.41	560.12	2.00	44.80	512.61	54.80	502.61	57.40	
TMW-1S	TMW-1S	TMW-1S	455739.88	1417703.19	559.78	561.63	2.00	48.30	511.48	58.30	501.48	59.75	
TMW-2S	TMW-2S	TMW-2S	455597.25	1416929.92	557.01	560.15	2.00	40.00	517.01	50.00	507.01	53.08	

See notes on page 2.

Table 3

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Well Completion Data - Groundwater Quality Monitoring

Water-Bearing Zone	Well ID - VOC Sampling			Northing (feet)	Easting (feet)	Ground Surface Elev (ft)	TOC Elevation (ft)	Inner Casing Diameter	Well Screen				Total Depth (ft bTOC) ³
	Hydraulic Control Monitoring	Progress Monitoring ¹	Semiannual Monitoring ²						Top (ft bgs)	Top (ft msl)	Bottom (ft bgs)	Bottom (ft msl)	
LSG													
			AF-5D	455889.87	1417834.37	559.50	561.66	2.00	100.00	459.50	110.00	449.50	108.10
AF-7D	AF-7D	AF-7D	455489.28	1417578.92	559.70	561.23	4.00	109.00	450.70	119.00	440.70	118.77	
AF-9D			455794.33	1416786.95	562.20	563.93	4.00	78.00	484.20	88.00	474.20	93.30	
AF-11D	AF-11D		456087.97	1416583.70	564.90	566.27	4.00	92.00	472.90	102.00	462.90	101.79	
AF-19D	AF-19D		455818.36	1417039.55	561.70	564.10	2.00	81.20	480.50	91.20	470.50	93.40	
		AF-21D	455941.03	1416777.12	560.00	559.61	2.00	80.00	480.00	90.00	470.00	90.11	
OSMW-1D	OSMW-1D	OSMW-1D	455082.67	1417738.40	551.10	554.16	2.00	80.00	471.10	90.00	461.10	92.75	
OSMW-3D	OSMW-3D	OSMW-3D	455309.10	1417107.28	557.10	559.91	2.00	131.00	426.10	141.00	416.10	143.31	
OSMW-4D	OSMW-4D	OSMW-4D	456143.93	1416386.96	565.50	565.14	2.00	127.00	438.50	137.00	428.50	135.94	
		OSMW-5D	452875.51	1416398.42	560.53	560.25	2.00	121.00	439.53	131.00	429.53	130.72	
		OSMW-6D	455147.40	1416265.11	586.38	586.08	2.00	149.77	436.61	159.77	426.61	162.20	
		OSMW-7D	456711.82	1415686.05	592.44	592.09	2.00	141.00	451.44	151.00	441.44	148.80	
		OSMW-8D	454625.45	1415147.03	584.64	584.34	2.00	175.30	409.34	185.30	399.34	187.20	
OSMW-9D	OSMW-9D		455705.86	1415409.84	594.66	594.39	2.00	166.00	428.66	176.00	418.66	175.60	
OSMW-10D	OSMW-10D		455020.11	1417400.16	555.82	558.61	2.00	130.00	425.82	140.00	415.82	142.63	
		OSMW-11D		455459.26	1418006.71	552.04	551.72	2.00	81.00	471.04	91.00	461.04	90.30
		PMW-2D		456024.30	1417902.40	560.05	562.47	2.00	125.00	435.05	135.00	425.05	139.70
PMW-3D	PMW-3D			455249.80	1417471.07	557.41	560.04	2.00	126.00	431.41	136.00	421.41	139.75
PMW-4D	PMW-4D			456424.32	1416617.44	564.33	567.25	2.00	130.00	434.33	140.00	424.33	142.51
	TMW-1D	TMW-1D	455740.26	1417702.92	559.78	562.02	2.00	94.30	465.48	104.30	455.48	106.45	
TMW-2D	TMW-2D	TMW-2D	455597.15	1416930.07	557.01	559.86	2.00	117.30	439.71	127.30	429.71	129.32	

Notes

¹ Quarterly Progress Monitoring in the Perched, USG and LSG.² Semiannual sampling occurs in the second and fourth quarters.³ Total depths from ground surface (GM-3P, OW-1P, AF-13S, AF-14S, GM-5D, OW-3D, OW-4D).⁴ The passive bag for AF-5P was stuck and the well could not be sampled.

Table 4

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Summary of Groundwater Sampling Results (1Q-15) - Detected Parameters Only

Location Sample Date	AF-11D 3/11/2015	AF-11S 3/11/2015	AF-13P 3/11/2015	AF-13S 3/11/2015	AF-19D 3/11/2015	AF-19S 3/11/2015	AF-25P 3/11/2015	AF-4P 3/11/2015	AF-4S 3/11/2015	AF-5S 3/11/2015	AF-6S 3/11/2015
FIELD PARAMETERS units											
pH	S.U.	7.75	7.44	7.00	7.95	7.43	7.45	7.53	7.55	7.45	7.54
Conductivity (mS/cm)	mS/cm	0.482	0.523	0.249	0.444	0.616	0.679	1.504	0.715	0.717	0.748
Turbidity (NTUs)	NTUs	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DO (mg/L)	mg/L	0.81	0.93	2.48	0.72	0.80	0.94	1.75	1.67	0.98	0.78
Temperature (°C)	Deg C	15.31	16.09	8.11	16.50	15.76	16.23	18.34	16.21	15.78	15.54
ORP (mV)	mV	-190.9	-168.8	-64.7	-160.0	-171.7	-180.6	-50.8	-20.4	-159.9	-192.1
DETECTABLE VOCs units											
1,1,1-Trichloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	340	43	< 1	< 1	< 1
1,1,2-Trichloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	< 4	< 2	< 1	< 1	< 1
1,1-Dichloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	65	7	< 1	4.4	< 1
1,1-Dichloroethene	ug/l	< 1	< 1	< 1	< 1	< 1	36	0.78	J	< 1	< 1
Acetone	ug/l	< 10	< 10	< 10	8.5	J	< 10	< 40	7.1	J	5.1
Benzene	ug/l	< 1	< 1	< 1	< 1	< 1	< 4	< 2	0.59	J	< 1
Chloroethane	ug/l	0.92	J	< 1	< 1	< 1	24	< 2	< 1	0.94	J
Chloroform	ug/l	< 1	< 1	< 1	< 1	< 1	2	J	0.93	J	< 1
cis-1,2-Dichloroethene	ug/l	< 1	< 1	< 1	11	< 1	< 1	81	3.4	< 1	4.6
Tetrachloroethene	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	4.5	11	< 1	< 1
trans-1,2-Dichloroethene	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	7	< 2	< 1	< 1
Trichloroethene	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	330	97	< 1	< 1
Vinyl Chloride	ug/l	0.91	J	3.1	< 1	< 1	12	8	< 2	< 1	30

Notes:

- 1) J = Estimated
- 2) NM = Not Measured
- 3) See Table 3 for listing of semiannual wells
- 4) F1 - See Appendix A - MS/MSD recovery issue-Sample results not affected

Table 4

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Summary of Groundwater Sampling Results (1Q-15) - Detected Parameters Only

Location Sample Date	AF-7D 3/10/2015	AF-7P 3/10/2015	AF-7S 3/10/2015	AF-9S 3/11/2015	OSMW-10D 3/10/2015	OSMW-10P 3/10/2015	OSMW-10S 3/10/2015	OSMW-11D 3/12/2015	OSMW-11P 3/12/2015	OSMW-11S 3/12/2015	OSMW-12P 3/12/2015	
FIELD PARAMETERS		units										
pH	S.U.	7.38	6.97	7.27	7.49	7.14	7.22	7.21	7.14	6.87	7.12	7.03
Conductivity (mS/cm)	mS/cm	0.602	3.738	1.285	0.621	0.578	0.725	0.735	0.77	0.56	0.48	0.91
Turbidity (NTUs)	NTUs	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DO (mg/L)	mg/L	NM	2.40	0.88	0.85	0.78	1.31	0.69	0.97	0.81	1.23	0.64
Temperature (°C)	Deg C	14.25	17.18	17.21	16.04	14.46	16.16	16.88	14.01	13.99	14.85	14.00
ORP (mV)	mV	-128.6	-61.2	-139.2	-174.8	-78.6	-33.7	-66.8	-58.6	-83.2	-52.5	41.7
DETECTABLE VOCs		units										
1,1,1-Trichloroethane	ug/l	< 1	< 1	< 10	< 1	< 1	29	29	< 8	< 1	< 8	3.3
1,1,2-Trichloroethane	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
1,1-Dichloroethane	ug/l	< 1	3.5	9.1 J	0.69 J	< 1	29	21	28	< 1	25	2.5
1,1-Dichloroethene	ug/l	< 1	< 1	4.5 J	< 1	< 1	0.76 J	0.52 J	< 8	< 1	< 8	< 1
Acetone	ug/l	< 10	< 10	< 100	< 10	6 J	< 20	5.3 J	< 80	< 10	< 80	< 10
Benzene	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
Chloroethane	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
Chloroform	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
cis-1,2-Dichloroethene	ug/l	< 1	3.8	650	1.5	< 1	12	34	230	1.4	190	< 1
Tetrachloroethene	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
trans-1,2-Dichloroethene	ug/l	< 1	< 1	< 10	< 1	< 1	< 2	< 1	< 8	< 1	< 8	< 1
Trichloroethene	ug/l	< 1	< 1	< 10	< 1	< 1	81	13	22	< 1	55	4
Vinyl Chloride	ug/l	< 1	3.7	650	21	1.6	< 2	1	< 8	< 1	< 8	< 1

Notes:

- 1) J = Estimated
- 2) NM = Not Measured
- 3) See Table 3 for listing of semiannual wells
- 4) F1 - See Appendix A - MS/MSD recovery issue-Sample results not affected

Table 4

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Summary of Groundwater Sampling Results (1Q-15) - Detected Parameters Only

Location Sample Date	OSMW-13P 3/12/2015	OSMW-1D 3/12/2015	OSMW-1P 3/12/2015	OSMW-1S 3/12/2015	OSMW-3D 3/11/2015	OSMW-3S 3/10/2015	OSMW-4D 3/11/2015	OSMW-4S 3/11/2015	OSMW-6D 3/11/2015	OSMW-9D 3/11/2015	OSMW-9S 3/11/2015
FIELD PARAMETERS	units										
pH	S.U.	6.90	7.20	6.89	7.30	7.20	7.33	6.94	9.16	7.97	6.98
Conductivity (mS/cm)	mS/cm	0.88	0.3	0.97	0.32	0.753	0.558	0.837	0.211	0.728	0.764
Turbidity (NTUs)	NTUs	NM									
DO (mg/L)	mg/L	0.81	0.70	0.89	0.86	0.89	1.22	0.95	0.68	0.96	0.52
Temperature (°C)	Deg C	15.27	14.65	14.53	15.20	14.70	16.92	15.02	15.56	15.33	15.11
ORP (mV)	mV	-14.7	-168.5	22.5	-159.3	-90.7	-176.1	-124.5	-27.5	-119.0	-131.0
DETECTABLE VOCs	units										
1,1,1-Trichloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1,2-Trichloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
1,1-Dichloroethane	ug/l	2.6	1.6	2.5	1.7	2.7	< 1	5.2	< 1	1.3	< 1
1,1-Dichloroethene	ug/l	< 1	< 1	< 1	< 1	0.31 J	< 1	0.68 J	< 1	< 1	0.66 J
Acetone	ug/l	< 10	4.1 J	3.7 J	3.1 J	3 J	< 10	< 10	< 10	< 10	< 10
Benzene	ug/l	< 1	< 1	< 1	0.47 J	0.82 J	< 1	< 1	< 1	< 1	< 1
Chloroethane	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
Chloroform	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
cis-1,2-Dichloroethene	ug/l	0.84 J	2.4	< 1	13	47	< 1	16	< 1	3.5	< 1
Tetrachloroethene	ug/l	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,2-Dichloroethene	ug/l	< 1	< 1	< 1	< 1	15	< 1	< 1	< 1	< 1	< 1
Trichloroethene	ug/l	< 1	< 1	< 1	< 1	220	< 1	< 1	< 1	< 1	< 1
Vinyl Chloride	ug/l	< 1	13	< 1	56	3.2	1.6	24	< 1	16	12

Notes:

- 1) J = Estimated
- 2) NM = Not Measured
- 3) See Table 3 for listing of semiannual wells
- 4) F1 - See Appendix A - MS/MSD recovery issue-Sample results not affected

Table 4

GE OHD 000 817 312
GE Aviation Evendale, Ohio - Groundwater IRM
Summary of Groundwater Sampling Results (1Q-15) - Detected Parameters Only

Location Sample Date	PMW-2D 3/11/2015	PMW-3D 3/10/2015	PMW-3P 3/10/2015	PMW-3S 3/10/2015	PMW-4D 3/11/2015	TMW-1D 3/11/2015	TMW-1P 3/11/2015	TMW-1S 3/11/2015	TMW-2D 3/11/2015	TMW-2S 3/11/2015
FIELD PARAMETERS										
pH	S.U.	7.40	7.30	7.22	7.52	7.40	7.35	7.90	7.17	7.39
Conductivity (mS/cm)	mS/cm	0.665	0.48	0.46	0.524	0.621	0.691	1.899	1.257	0.746
Turbidity (NTUs)	NTUs	NM								
DO (mg/L)	mg/L	0.84	0.70	0.70	0.47	0.67	0.88	3.12	1.02	0.61
Temperature (°C)	Deg C	13.42	14.12	16.24	17.01	14.96	14.53	17.25	16.35	14.59
ORP (mV)	mV	-129.1	-112.7	-15.6	-168.7	-167.3	-161.8	-17.1	-171.7	-144.6
DETECTABLE VOCs										
1,1,1-Trichloroethane	ug/l	< 1	< 1	71	4.7	< 1	< 1	110	< 1	< 10
1,1,2-Trichloroethane	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	0.29 J	< 1	< 10
1,1-Dichloroethane	ug/l	< 1	3.9	46	4.9	< 1	< 1	47	< 1	< 10
1,1-Dichloroethene	ug/l	< 1	< 1	1.7 J	0.34 J	< 1	< 1	8.9	< 1	< 10
Acetone	ug/l	5.7 J	5.7 J	< 50	5.5 J	< 10	< 10	6.3 J	< 10	< 100
Benzene	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	0.49 J	< 1	< 10
Chloroethane	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	1.2	< 1	< 10
Chloroform	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	0.96 J	< 1	< 10
cis-1,2-Dichloroethene	ug/l	< 1	25	180	41	< 1	< 1	32	4.5	590
Tetrachloroethene	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	0.97 J	< 1	< 10
trans-1,2-Dichloroethene	ug/l	< 1	< 1	< 5	< 1	< 1	< 1	1.3	< 1	180
Trichloroethene	ug/l	< 1	1.2	27	19	< 1	< 1	110	< 1	< 10
Vinyl Chloride	ug/l	< 1	25	< 5	21	3.1	< 1	15	11	37

Notes:

- 1) J = Estimated
- 2) NM = Not Measured
- 3) See Table 3 for listing of semianual wells
- 4) F1 - See Appendix A - MS/MSD recovery issue-Sample results not affected

Table 5

GE OHD 000 817 312
Evendale, Ohio
Groundwater Chemical Cross Contamination Analyses

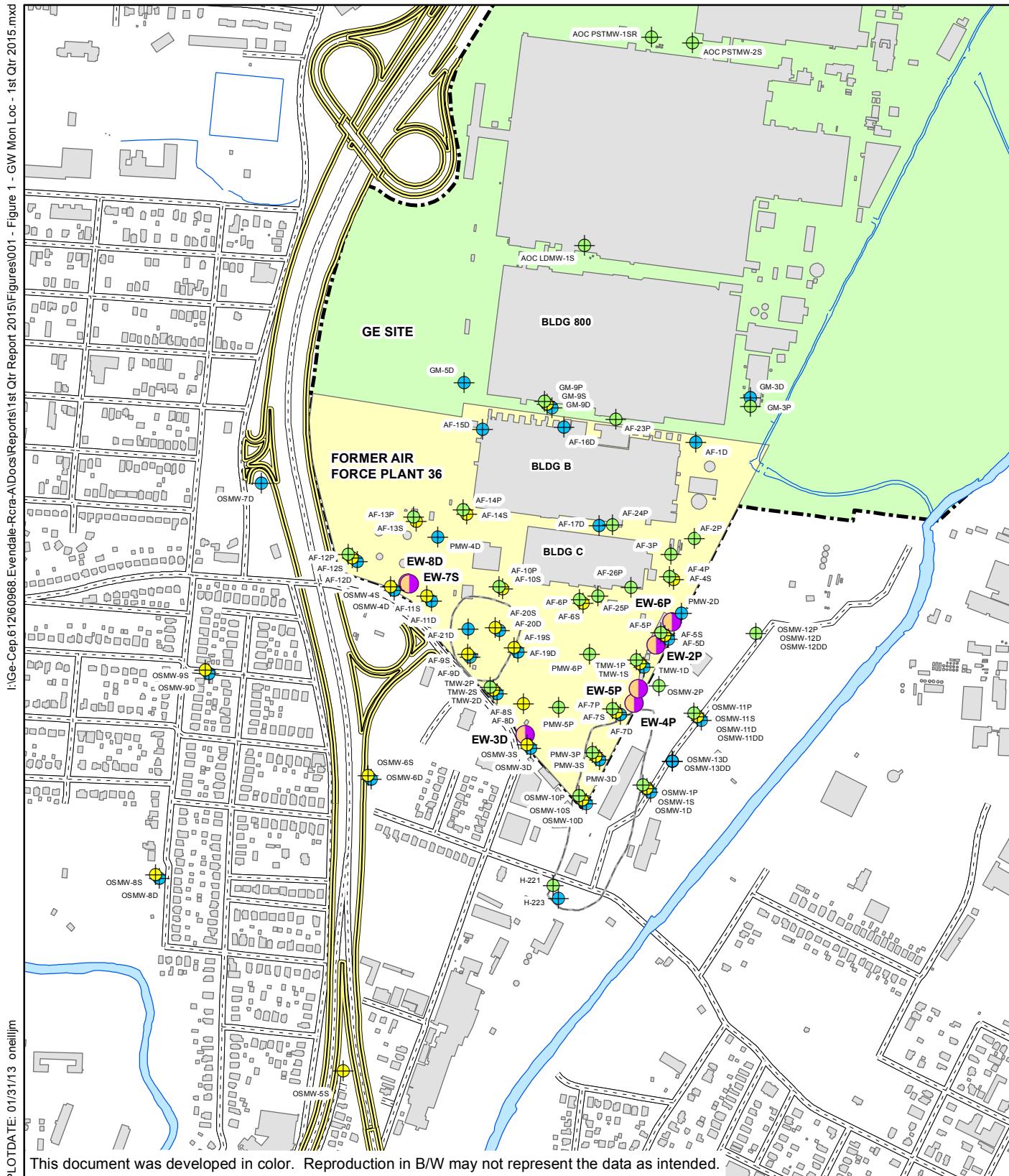
Well ID	3/11/2015			
	TCA Group Values ¹ (µmol/L)	TCE Group Values ¹ (µmol/L)	TCA Group Comparison ²	TCE Group Comparison ²
AF-11D	0.014	0.015	REJECT	ACCEPT
AF-11S	0.00	0.05	ACCEPT	ACCEPT
AF-13P	0.00	0.00	ACCEPT	ACCEPT
AF-13S	0.00	0.11	ACCEPT	REJECT
AF-19D	0.00	0.00	ACCEPT	ACCEPT
AF-19S	0.00	0.19	ACCEPT	ACCEPT
AF-25P	3.95	3.56	ACCEPT	ACCEPT
AF-4P	0.40	0.84	REJECT	REJECT
AF-4S	0.00	0.00	ACCEPT	ACCEPT
AF-5S	0.06	0.53	ACCEPT	ACCEPT
AF-6S	0.00	0.01	ACCEPT	ACCEPT
AF-7D	0.00	0.00	ACCEPT	ACCEPT
AF-7P	0.04	0.10	ACCEPT	ACCEPT
AF-7S	0.14	17.10	ACCEPT	ACCEPT
AF-9D	0.00	0.00	ACCEPT	ACCEPT
AF-9S	0.01	0.35	ACCEPT	ACCEPT
OSMW-10D	0.00	0.03	ACCEPT	ACCEPT
OSMW-10P	0.52	0.74	ACCEPT	ACCEPT
OSMW-10S	0.43	0.47	ACCEPT	ACCEPT
OSMW-11D	0.28	2.54	ACCEPT	ACCEPT
OSMW-11P	0.00	0.01	ACCEPT	REJECT
OSMW-11S	0.25	2.38	ACCEPT	ACCEPT
OSMW-12P	0.05	0.03	ACCEPT	ACCEPT
OSMW-13P	0.03	0.01	ACCEPT	ACCEPT
OSMW-1D	0.02	0.23	ACCEPT	ACCEPT
OSMW-1P	0.03	0.00	ACCEPT	ACCEPT
OSMW-1S	0.02	1.03	ACCEPT	ACCEPT
OSMW-3D	0.03	2.36	ACCEPT	ACCEPT
OSMW-3S	0.00	0.03	ACCEPT	ACCEPT
OSMW-4D	0.06	0.55	ACCEPT	ACCEPT
OSMW-4S	0.00	0.00	ACCEPT	ACCEPT
OSMW-6D	0.01	0.29	ACCEPT	ACCEPT
OSMW-9D	0.00	0.19	ACCEPT	ACCEPT
OSMW-9S	0.024	2.32	ACCEPT	ACCEPT
PMW-2D	0.00	0.00	ACCEPT	ACCEPT
PMW-3D	0.04	0.67	ACCEPT	ACCEPT
PMW-3P	1.01	2.06	ACCEPT	ACCEPT
PMW-3S	0.09	0.90	ACCEPT	ACCEPT
PMW-4D	0.00	0.05	ACCEPT	ACCEPT
TMW-1D	0.00	0.00	ACCEPT	ACCEPT
TMW-1P	1.41	1.42	ACCEPT	ACCEPT
TMW-1S	0.00	0.22	ACCEPT	ACCEPT
TMW-2D	0.00	8.53	ACCEPT	ACCEPT
TMW-2S	0.00	0.00	ACCEPT	ACCEPT

Footnotes:

1. The methodology for calculating the upper tolerance limit (UTL) is included in the Performance Monitoring Plan.

2. The introwell analysis for AF-4P (TCA and TCE Groups), AF-11D (TCA Group), AF-13S (TCE Group) and OSMW-11P (TCE Group) were triggered because the analysis compared the UTL values developed from non-detectable or low detections of baseline concentrations and is triggered by a slight increase in CVOCs and are not an indication of vertical or lateral cross-contamination.

Figures

FIGURE 1

GE EVENDALE, OHIO

N

GROUNDWATER IRM MONITORING LOCATIONS

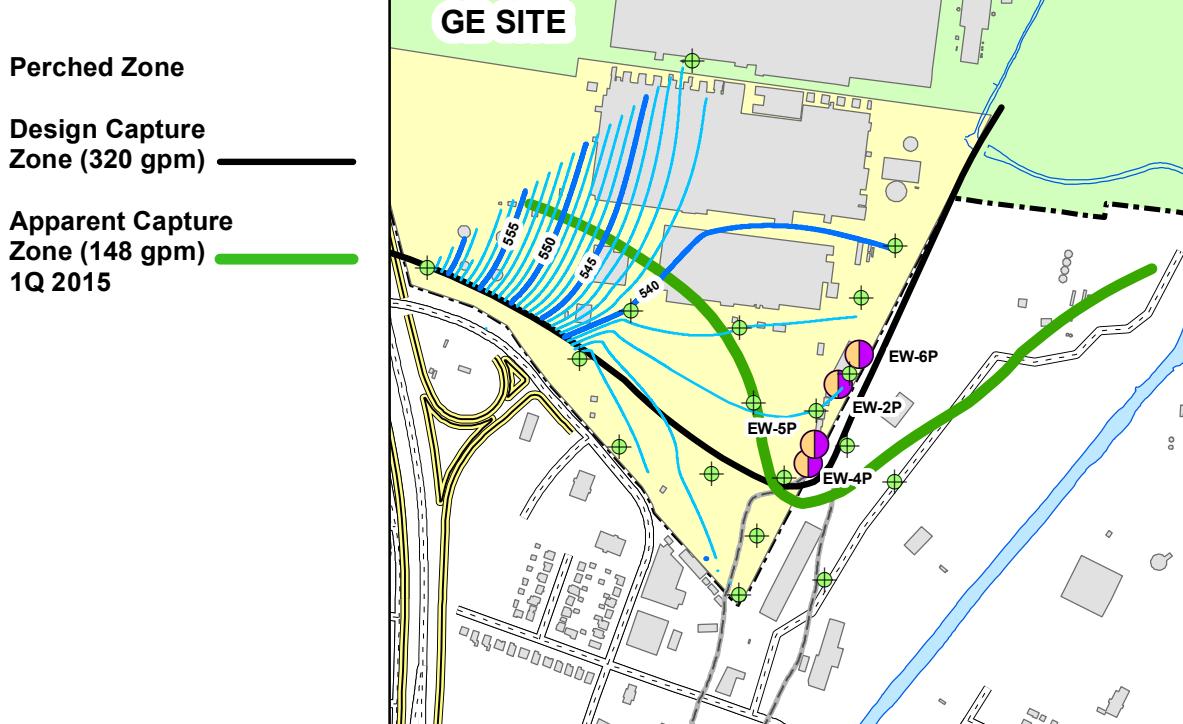
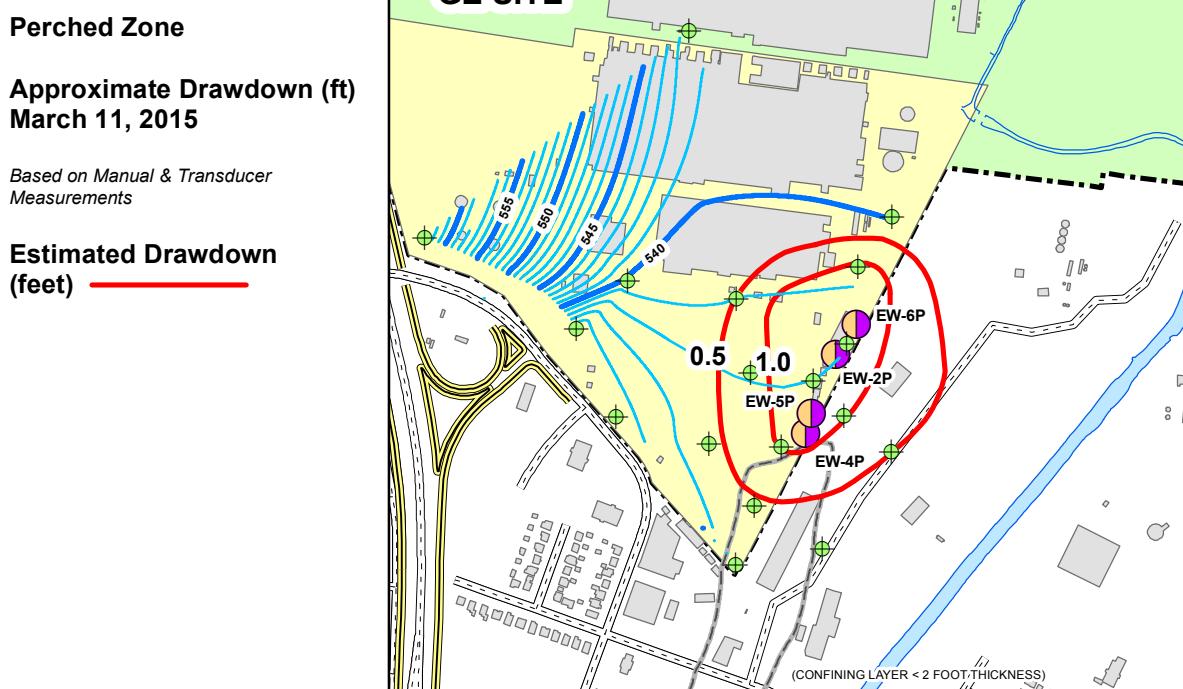
0 400 800 1,200 1,600
Feet

- LEGEND**
- PERCHED MONITORING WELL LOCATION
 - USG MONITORING WELL LOCATION
 - LSG MONITORING WELL LOCATION
 - EXTRATION WELL

FIGURE 2

I:\Ge-Cep\61260968.Evendale-Ratra\Reports\1st Qtr Report 2015\Figures\002 - Figure 2 - Perched 1st Qtr 2015.mxd

PLOT DATE: 2/04/2015 oneilljm



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**GE
EVENDALE, OHIO**

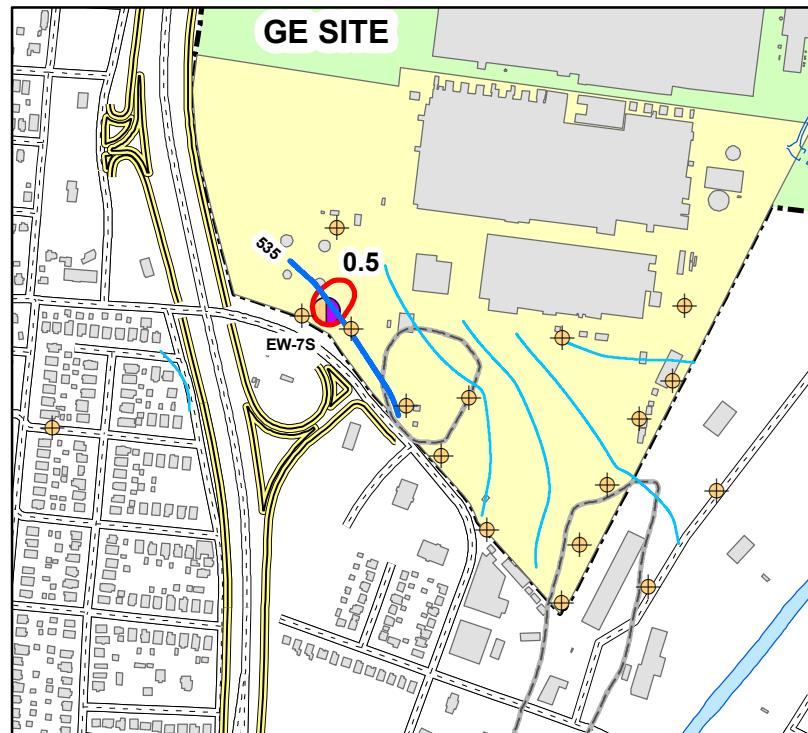
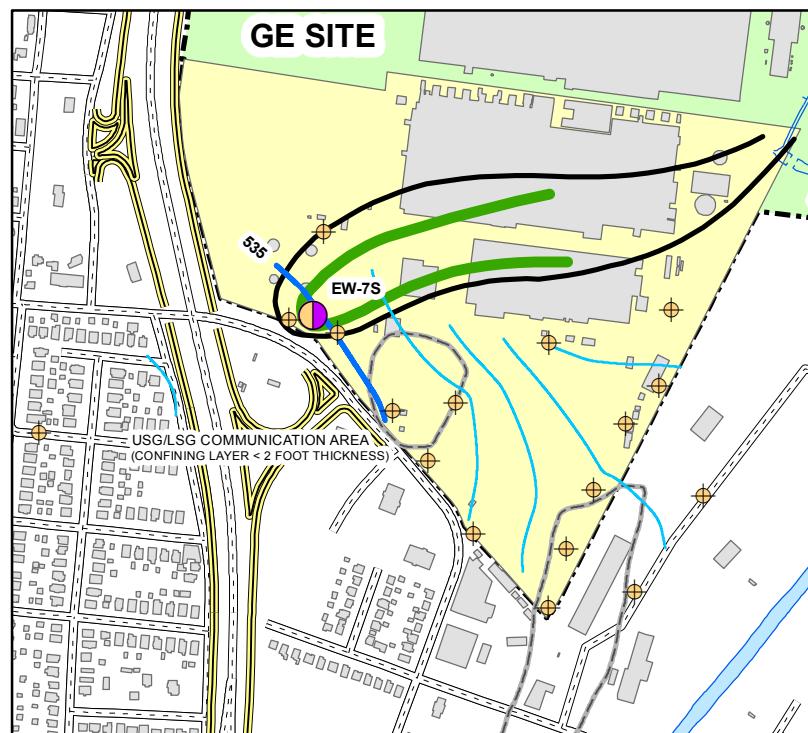
**PERCHED UNIT
ESTIMATED DRAWDOWN
AND CAPTURE ZONE**



FIGURE 3

I:\Ge-Cep_612\606968\Evendale-Rcrs\A1\Docs\Reports\1st Qtr Report 2015\Figures\003 - Figure 3 - USG - 1st Qtr 2015.mxd

PLOT DATE: 03/14/13 oneilljm

USG Zone**Approximate Drawdown (ft)
March 11, 2015***Based on Manual & Transducer
Measurements***Estimated Drawdown
(feet)** **USG Zone****Design Capture
Zone (80 gpm)** **Apparent Capture
Zone (5 gpm)
4Q 2014** 

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**GE
EVENDALE, OHIO**

N

**USG UNIT
ESTIMATED DRAWDOWN
AND CAPTURE ZONE**

FIGURE 4

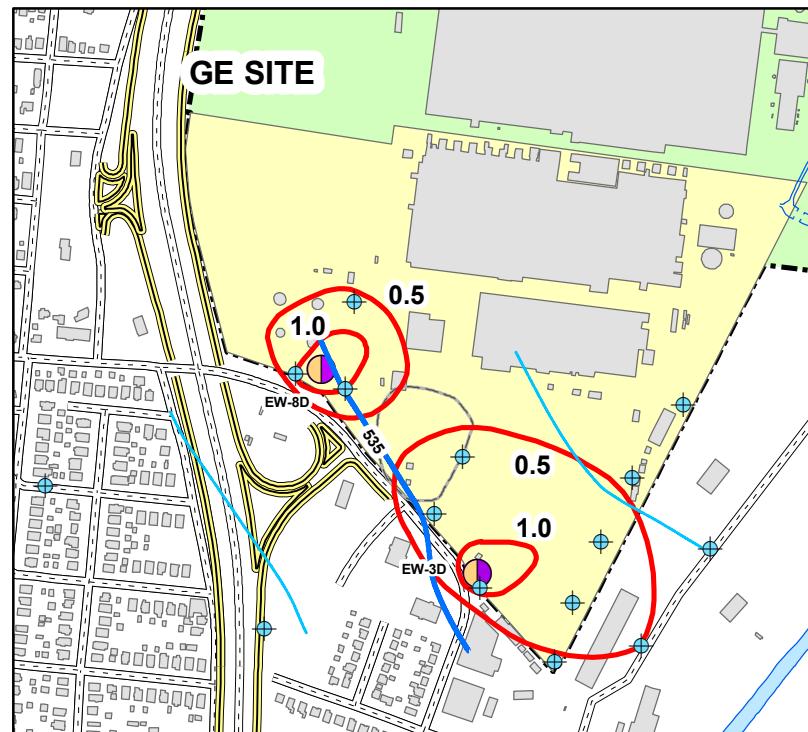
I:\Ge-Cep.61260968.Evendale-Rcrta-A\Docs\Reports\1st Qtr Report 2015\Figures004 - Figure 4 - LSG - 1st Qtr 2015.mxd

LSG Zone

**Approximate Drawdown (ft)
March 11, 2015**

*Based on Manual & Transducer
Measurements*

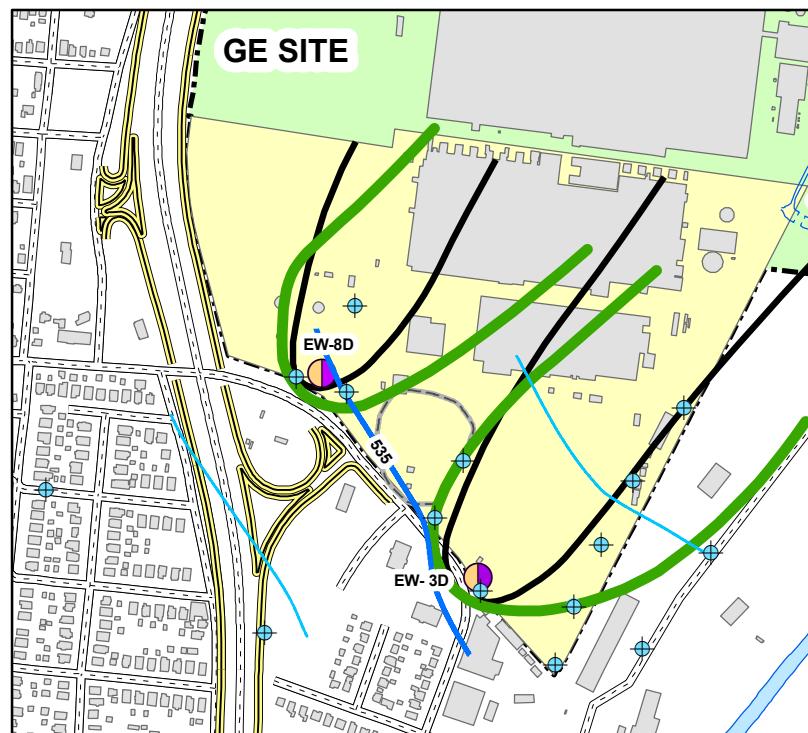
**Estimated Drawdown
(feet)** —————



LSG Zone

**Design Capture
Zone (160 gpm)** —————

**Apparent Capture
Zone (98 gpm)
4Q 2014** —————



PLOT DATE: 6/11/2014 oneilljm

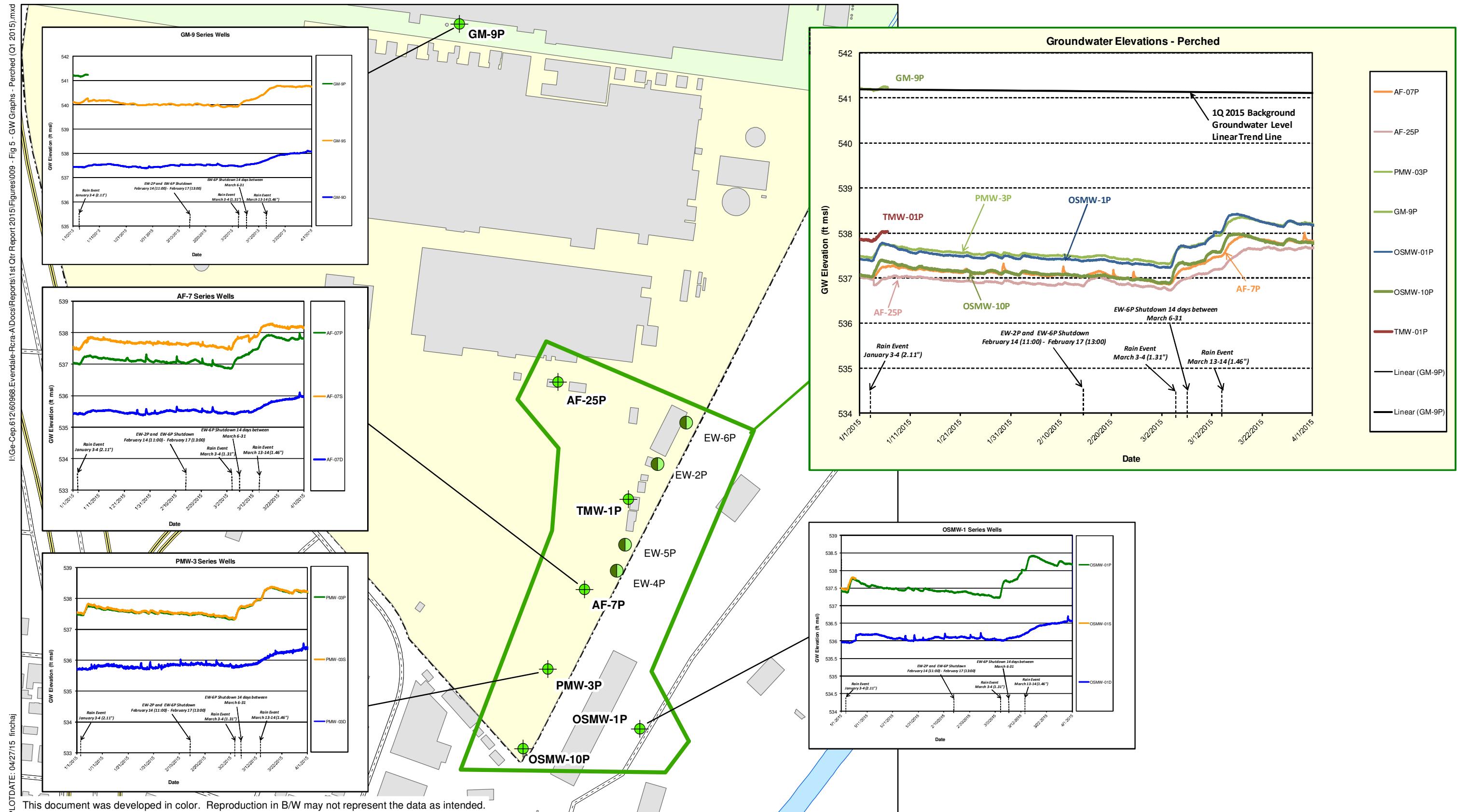
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**GE
EVENDALE, OHIO**

N

**LSG UNIT
ESTIMATED DRAWDOWN
AND CAPTURE ZONES**

FIGURE 5



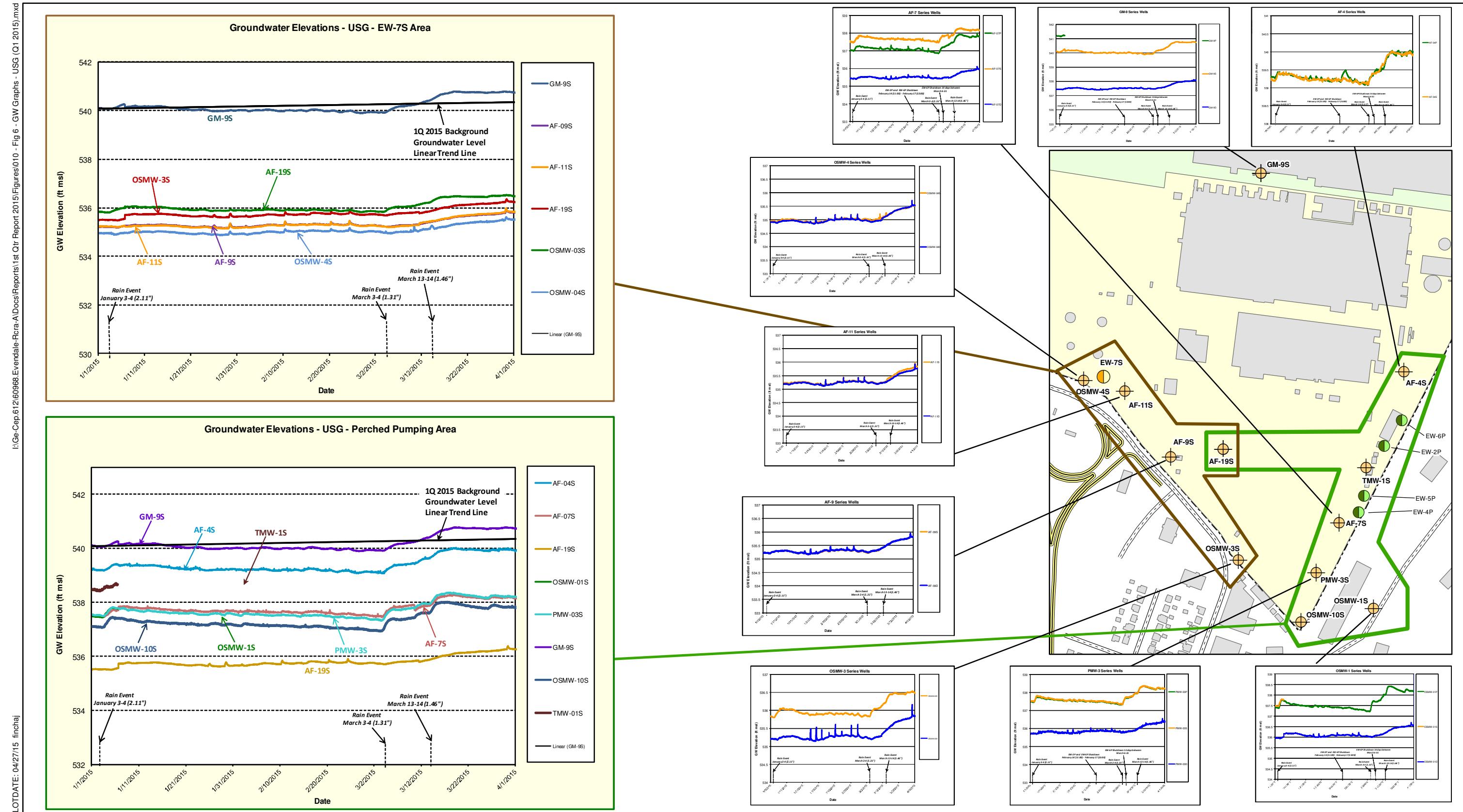
LEGEND

- PERCHED MONITORING WELL
- PERCHED EXTRACTION WELL

GE EVENDALE, OHIO

0 100 200 400 600 800
Feet

GROUNDWATER ELEVATION HYDROGRAPHS PERCHED UNIT 2015 1st QUARTER



LEGEND

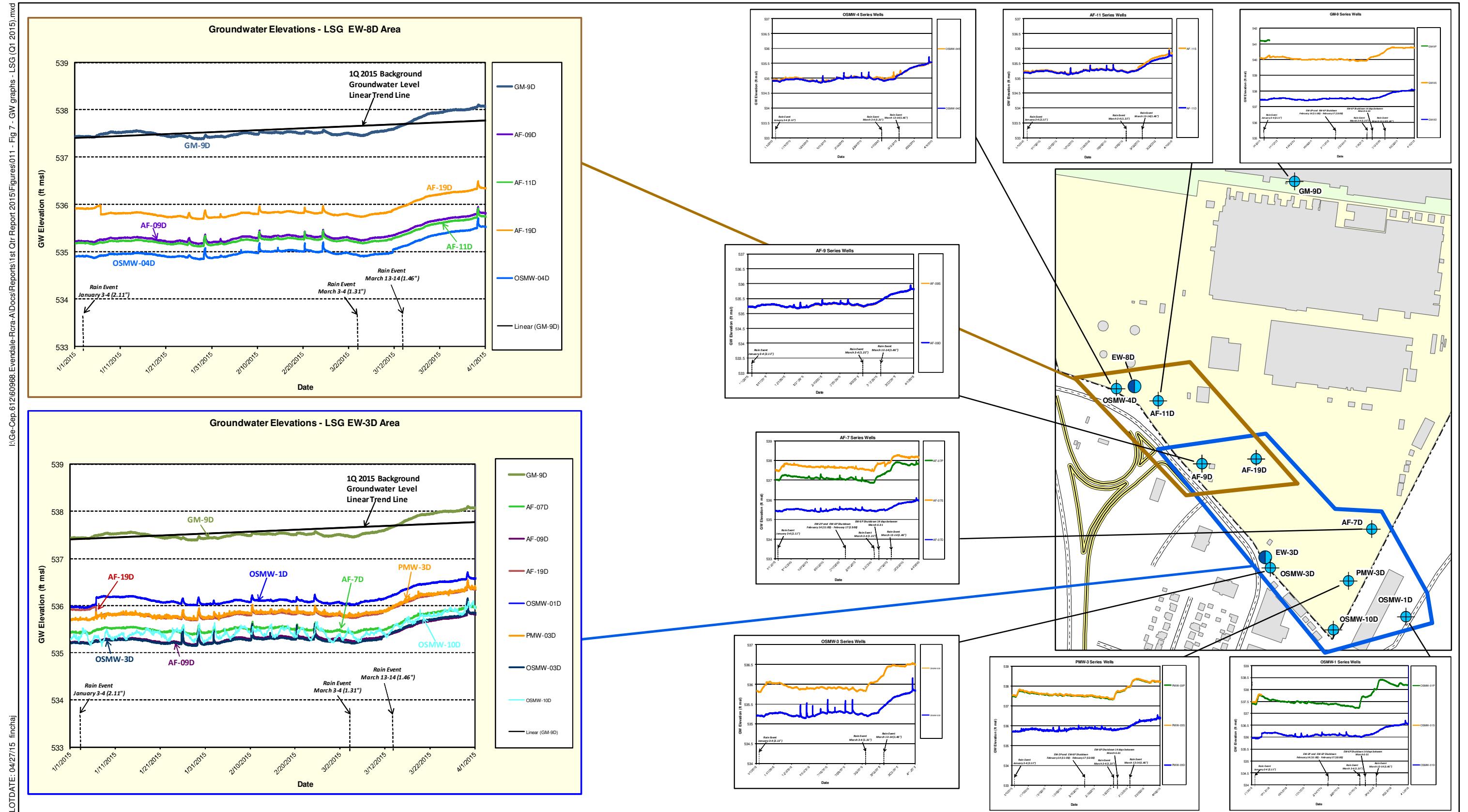
- USG MONITORING WELL
- USG EXTRACTION WELL
- PERCHED EXTRACTION WELL

GE EVENDALE, OHIO

0 100 200 400 600 800
Feet

GROUNDWATER ELEVATION HYDROGRAPHS
USG UNIT
2015 1st QUARTER

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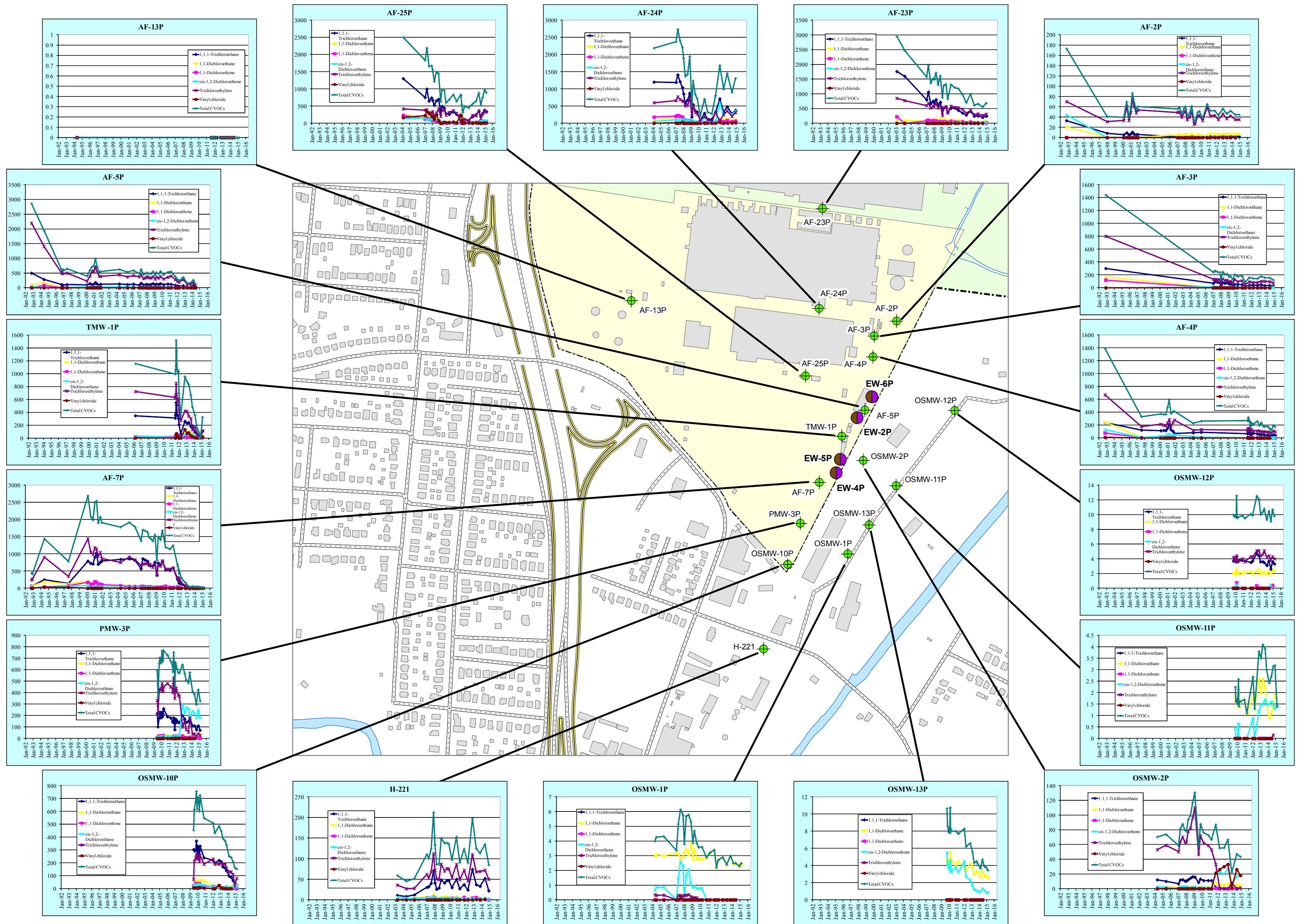
LEGEND

- LSG MONITORING WELL
- LSG EXTRACTION WELL

GE EVENDALE, OHIO

0 100 200 400 600 800
Feet

**GROUNDWATER ELEVATION HYDROGRAPHS
LSG UNIT
2015 1st QUARTER**



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FIGURE 8

LEGEND

● PERCHED ZONE MONITORING WELL - GROUNDWATER SAMPLE COLLECTED FOR ANALYTICAL ANALYSIS

● PERCHED ZONE EXTRACTION WELL

GRAPH KEY

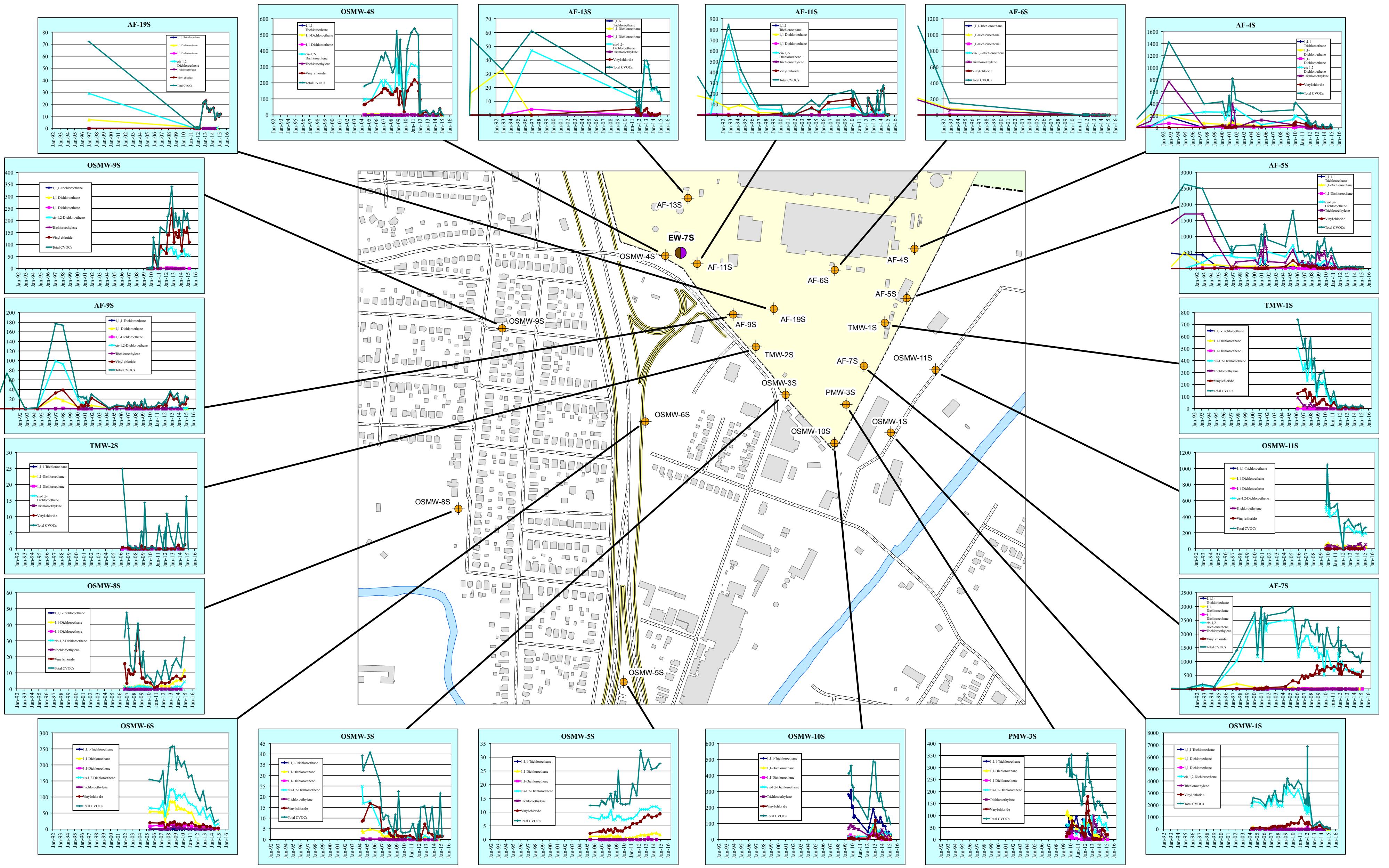
● 1,1,1-TRICHLOROETHANE	● 1,1-DICHLOROETHANE
● 1,1-DICHLOROETHENE	● CIS-1,2-DICHLOROETHENE
● TRICHLOROETHYLENE	● VINYL CHLORIDE
● TOTAL CVOCs	

NOTES:
1. RESULTS ARE SHOWN IN ug/l.
2. NON-DETECTED RESULTS ARE SHOWN AT THE X AXIS.
3. CONCENTRATION SCALE MAY VARY BY GRAPH.

PERCHED ZONE HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

0 250 500 1,000
Feet

MARCH 2015
61260968-005



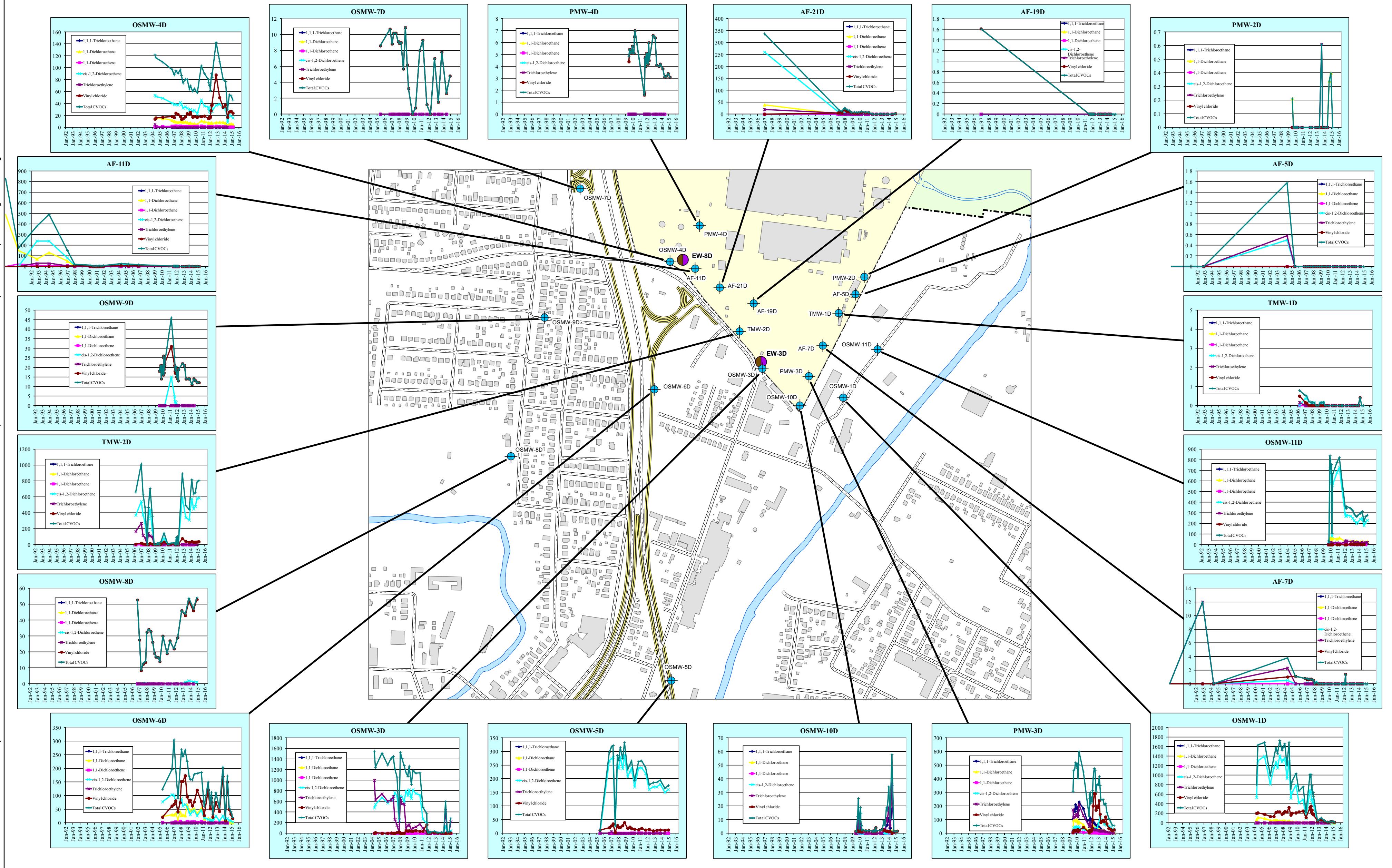
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FIGURE 9GE
EVENDALE, OHIO

UPPER SAND AND GRAVEL HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

0 250 500 1,000
Feet

MARCH 2015
61260968-006



LOWER SAND AND GRAVEL HISTORICAL GROUNDWATER ANALYTICAL RESULTS FOR IRM MONITORING WELLS

GE
EVENDALE, OHIO

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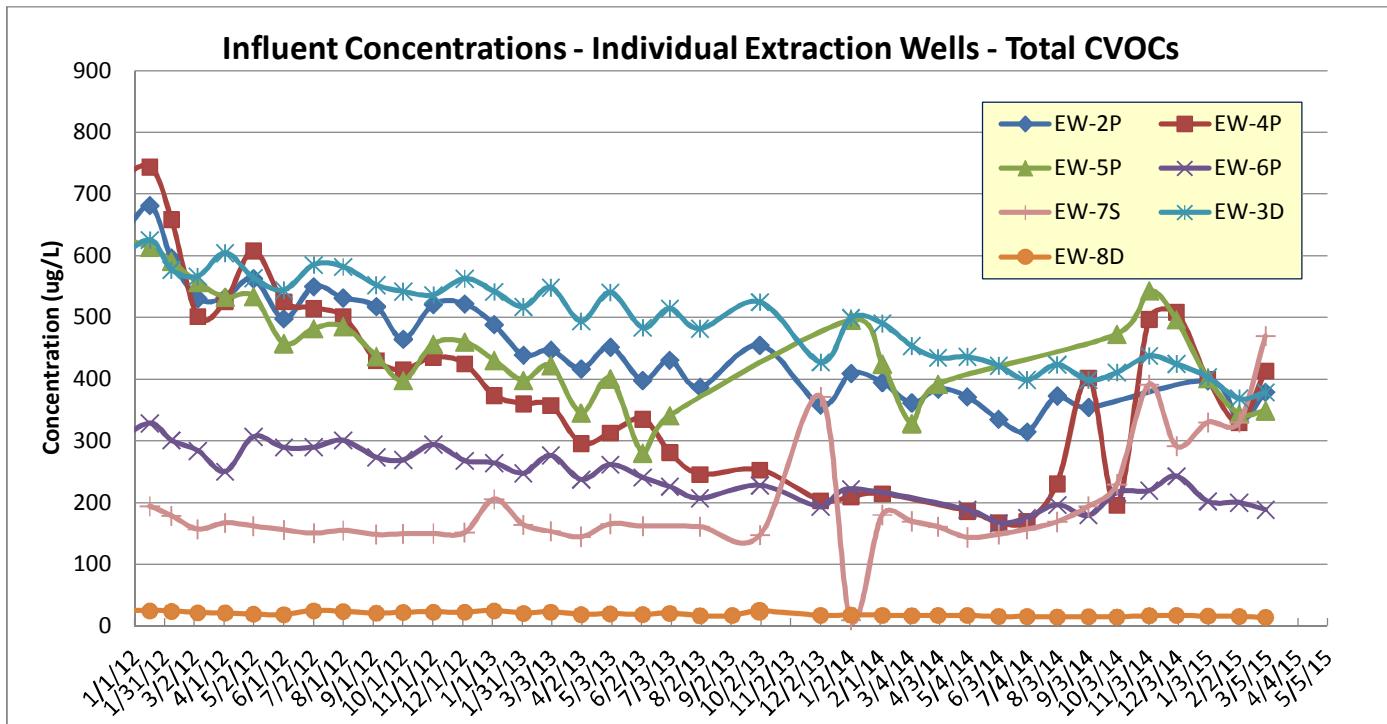
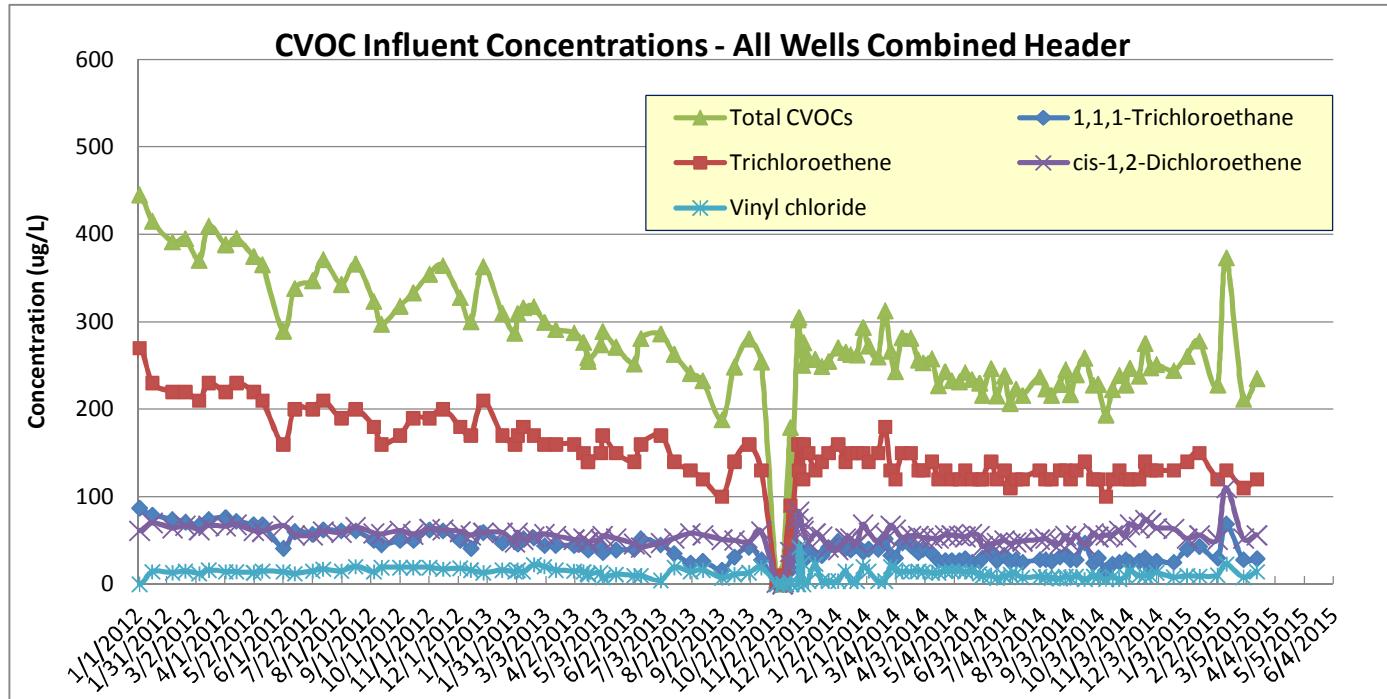
FIGURE 10



MARCH 2015
612/6098-007

FIGURE 11

Total CVOC Concentration Plots – Extraction Wells



Appendix A
*IRM Groundwater Sampling
Program QA/QC Results and
Data Verification*

APPENDIX A QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

Level A data verification was performed by O'Brien & Gere Engineers, Inc. to assess groundwater IRM performance monitoring data quality for samples collected during the First Quarter 2015 (March 10, 2015 through March 12, 2015). Data verification was performed in accordance with the *IRM Performance Monitoring Plan* dated December 2010. The data verification level (Level A) for the performance samples was selected based upon data use (screening and trend analysis) and the quality of the laboratory data. Data verification was utilized to confirm the quality of the laboratory (TestAmerica Buffalo, Inc. (TA Buffalo) of Amherst, New York), which has an established record of acceptable quality for target analyte data from the routine groundwater IRM performance monitoring program. The Level A data verification included review of: (1) laboratory documentation, (2) chain-of-custody (COC) documentation, (3) target analyte results, (4) laboratory data qualifiers, (5) laboratory quantitation limits and method detection limits, (6) laboratory blank analysis, and (7) quality control samples.

The results of the Level A data verification indicated the following:

- Laboratory documentation was complete.
- Chain-of-custody (COC) documentation was complete.
- Target analyte results and data qualifiers were reported in accordance with the project requirements.
- Laboratory blank analysis did not indicate evidence of artifacts from the sampling or analytical process with the following exception: the method blanks were within control limits and were not detected above the method detection limits, except that the method blank for batch 230918 contained Methylene Chloride above the method detection limit at a concentration of 0.569 µg/L. However, the associated samples from AF-7S-031015, the MS/MSD for AF-7D-031015, PMW-3P-031015, PMW-3S-031015, OSMW-10S-031015, and Trip Blank-031015 were non-detected for methylene chloride and do not need further qualification, and the associated data is usable as reported.
- Laboratory quantitation limits are within the limits listed in the QAPP, except for acetone and 2-butanone which were reported as 10 µg /l (SAP QLs are 5 µg /l). The reporting limits for acetone and 2-butanone reported by TA Buffalo were revised from 5 µg/l to 10 µg/l.
- The matrix spike / matrix spike duplicate (MS/MSD) recoveries were within control limits, except for the vinyl chloride recoveries for batch 231633, which were outside of the control limits (65% to 133%) at 56% in the MS sample and 47% in the MSD sample. The sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample recovery met acceptance criteria; therefore, the vinyl chloride results do not require additional qualification due to the MS/MSD control limit excursion.
- The surrogate recoveries for the samples were within control limits; therefore, the associated data is usable as reported.
- The continuing calibration verification (CCV) results were within control limits.
- The laboratory control samples (LCS) were within control limits, except for the LCS and/or laboratory control sample duplicates (LCSD) associated with batches 231148 and 231416 due to the coelution of Ethyl Acetate with 2-Butanone in the full spike solutions causing these analytes to exceed their respective control limits. However, none of the affected samples contained these analytes above their respective detection limits; therefore, the associated data is usable as reported.
- Eleven samples were diluted to bring the target analytes into the calibration range: AF-4P-031115, AF-7S-031015, AF-25P-031115, OSMW-3D-031115, OSMW-9S-031115 (and the associated MS/MSD sample), OSMW-10P-031015, OSMW-11D-031215, OSMW-11S-031215, PMW-3P-031015, TMW-1P-031115, TMW-2D-031115. Elevated reporting limits are provided.

The overall usability for the performance monitoring data is acceptable for the intended use.

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